Stories Describing the Lessons Learnt on Developing Business Cases

Reporting 2017

Flagship Project on

Developing, adapting, and targeting portfolios of climate-smart agricultural practices for sustainable intensification of smallholder and vulnerable farming systems in South Asia

CIMMYT International Maize and Wheat Improvement Center

CGIAR Research Program on Climate Change, Agriculture and Food Security — CCAFS

WAGENINGEN UNIVERSITY & RESEARCH

STORY 1

Business models of small and medium enterprises as mechanism for scaling climate smart agriculture

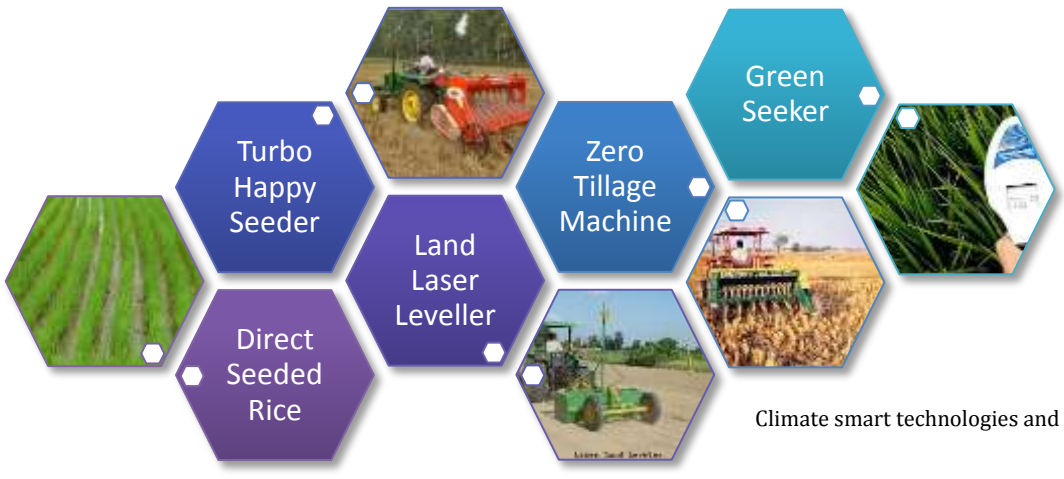
In order to meet the expected food demand in 2050 we need to increase our agricultural production. Climate change is an important threat to agriculture, especially in countries like India where its production is fluctuating as a result. Mr. Rabersing is a relatively young farmer (28 years old) and notices effects of a changing climate; "*The summers seem to be hotter and we also encounter a lack of proper rains. This of course has its effect on production, and in the case of wheat, on the quality of the grains. Accessing irrigation water is not a problem with a bore well, though the groundwater is depleting with approximately 2 feet per year".* For a service provider in climate smart technologies, these problems can be translated into business opportunities in a growing market. He also sees that farmers are challenged by the ban on residue burning by the government, which is likely to increase the demand for specific climate smart technologies.

Stubble burning in Punjab, 2016

Business opportunities for SMEs

Selling and /or hiring out a package of different climate smart technologies and practices proves to be an interesting business opportunity for small and medium sized enterprises (SMEs). Cooperatives and individual service providers offer services surrounding these technologies to smallholder farmers, which increases farmers' access to climate smart technologies that offer social, economic and environmental benefits without having to invest in the full technology themselves. At the same time, selling and/or hiring out climate smart technologies appears to be a viable business for these SMEs. Their business model becomes a scaling mechanism. SMEs acting as change agents supporting adoption, and scaling of climate smart technologies also offers new opportunities for other stakeholders such as governments. Exploiting drivers and addressing barriers hindering the implementation of their business models, climate smart agriculture can be implemented more targeted and effective with lower subsidy requirements.

In the past years several cooperatives and service providers in Punjab have been involved in selling and leasing of climate smart technologies.



Climate smart technologies and practices in Punjab

Noorpur Bet is such a cooperative with 760 members between 22 and 75 years old. They offer climate smart technologies as a service and see that it catches on. "*Farmers prefer to learn from other farmers. They are interested in cost saving technologies, like saving on labour costs. An example is the direct seeded rice where farmers save on labour, water and energy".* But it also offers interesting business for service providers like Mr. Rapalsing. He is known as a very entrepreneurial farmer in the region surrounding Haryana and Punjab. He offers services on the Land Laser Leveller and the Combined Harvester: "*I could level my own field, but then also generate some extra revenue by providing this as a service".* He also considers buying a Happy Seeder machine; "*As the government will ban residue burning, the Happy Seeder will remain the only solution. I am able to afford this machine and I expect good business from it".*

Farming becomes exciting again

In the CCAFS programme, there is specific focus on the development of viable business models around climate smart technologies in order to support strong and sustainable agricultural businesses. The programme demonstrate the importance of partnership between SMEs, small farmers and research and a clear value proposition as enablers of the adoption and scaling. The lack of market intelligence hinders SME's investment decisions and the government subsidy system. In some areas, subsidized Land Laser Levellers are no longer profitable as there are redundant services provided considering the potential uptake.

Good news is that success stories from other countries substantiate the claim that both technology and innovative farming techniques have been able to make farming exciting again, especially amongst young people. The combination of technologies that are climate smart, offer social and economic benefits to SMEs as well as to farmers. Payment for these services contributes to sustainable long term business and economic growth.

Furthermore, if different types of climate smart technologies are combined into a package, the payback period will be shorter than when SME's would increase the number of technologies they offer over time. Taking up packages and combining all technologies into one product naturally increases the speed of adoption of climate smart practices.

Subsidy

Subsidies can help encourage the uptake of CSA technologies through business models, but not in every case. For example, when a technology is already widely available, for a business, subsidy could be harmful. Furthermore, subsidy on free electricity and water use could provide perverse effects on the journey towards a more climate smart state.

Climate smart technologies offer interesting business opportunities and are especially interesting when combined into a combined product, a package. This facilitates the adoption and scaling of climate smart agriculture, but also enables SME's to generate higher returns on their investments. The government plays an important role in facilitating the proper (financing) infrastructures.

Learn more

STORY 2

Young farmers attracted by viable climate smart solutions

Viable business models around climate smart technologies in order to create strong and sustainable agricultural businesses for smallholder farmers

With the growing global population and the concerns of the effect this might have on food security (food production will need to increase by 70% by 2050 according to FAO), it is estimated that more than 60,000 farmers will be needed to provide in food production. For the past few years, worldwide concern has arisen for the absence of youth in agriculture. In Africa, the current average age of farmers is 60 years old, in South Asia this age ranges between 42 years (Pakistan) and 52 years (Sri Lanka and Bangladesh). Global developments that threaten participation of youth in agriculture entail increasing population and urbanisation; allocating resources to urban areas at the expense of youth in rural areas.

Not a lot of young people consider a career in farming. Most farmers would not want for their children to become farmers and most children do not aspire a life on the farm. For young people this is mostly based on perception and the image that farming has. A survey in England (Careers in Farming and Food Supply) amongst young people pointed out that they find farming to be "boring, repetitive and low-paid".

"Young farmers need to consider agriculture as viable businesses instead of constraints for living"

Yet young farmers are crucial in the battle for food and nutrition security, adaptation and mitigation of climate change impacts and for social economic issues such as unemployment. These challenges offer various business opportunities as well. Governments, knowledge institutes and the private sector can help bringing out these opportunities by investing in technological and policy interventions. This will help young farmers to see agriculture as viable businesses instead of constraints for living.

"Making farming profitable through climate smart technologies"

The CGIAR (Global Agricultural Research Partnership) Research Program on Climate Change, Agriculture and Food Security (CCAFS) is such a programme where farmers, policy makers, the private sector and knowledge institutes work together to test a range of interventions in climate-smart villages. They meet and work together on climate smart interventions such as climate smart technologies, knowledge systems, sensing systems and inputs. In Haryana, India, several young farmers are involved in the CCAFS program. Climate smart technologies offer them opportunities to work on creating climate smart production processes along with developing a viable business. One of those farmers is Surender (28 years old) who owns 20 acres of land. He has purchased the laser land leveller as he wanted to bring down the use of water without having to give in to a decrease in production. The machine; a tractor-towed, laser-controlled device levels the land, prevents water logging and keeps production levels steady. In both Haryana and Punjab, laser land levelling has been

estimated to increase yields as high as 340 kg per hectare for rice and 320 kg per hectare for wheat per season. Surender was able to witness the successful effects of the laser land leveller at his neighbours' land. He is currently thinking about purchasing a Happy Seeder as well. The Happy Seeder is used to sow wheat, through left over residue on the field. It manages to create climate smart solutions whilst cutting down on costs for labour and fuel, and decreasing environmental harm. Farmers are currently supported with subsidies which allow for them to earn back their investments within a year. Entrepreneurial farmers who own such technologies sometimes offer the service for other farmers to rent these machines. This happens at a rate that is able to generate profit for these farmers. This way they benefit from the technology but other less fortunate farmers can benefit as well. Governments benefit as these technologies work on climate smartness and reduction of pollution, the private sector benefits from the direct sale and service provision of the technology itself.

"Business models as mechanism to scale CSA"

This is an example where a business model can be used as a scaling mechanism. Yet farmers are not solely motivated by financial means anymore. They also put great weight in spending time with their families. The ways in which these technologies help them in saving time is an important incentive for them as well.

In the CCAFS programme, there is specific focus on the development of viable business models around climate smart technologies in order to create strong and sustainable agricultural businesses. Success stories from other countries have been able to substantiate the claim that technology and innovative farming techniques have been able to make farming exciting again. This will attract participation of a larger proportion of highly-educated young farmers that will reconsider the old image that agriculture used to have.

Learn More

Sources:

- https://www.weforum.org/agenda/2015/01/how-we-can-help-small-farmers-feed-the-world/
- http://www.fao.org/docrep/x5636e/x5636e01.htm
- https://oxfamblogs.org/fp2p/who-wants-to-farm-hardly-any-young-people-it-seems-shouldcould-that-change/
- https://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/3550/Wp439r.pdf?sequence=4
- http://www.bbc.com/news/business-18968995
- https://www.theguardian.com/global-development-professionals-network/2015/jan/28/youth-farming-technology-new-generation
- http://www.futuredirections.org.au/publication/agricultural-productivity-lack-young-farmers/
- http://vdsa.icrisat.ac.in/Include/MiniSymposium/2.pdf
- http://www.fao.org/fileadmin/templates/wsfs/docs/expert_paper/How_to_Feed_the_World_in_2050.pdf